

A remarkable new dimorphic Isometopid and two other new species of Hemiptera predaceous upon the red scale of citrus.

by

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In 1944 and also 1946 Mr. E. C. Bedford of Letaba submitted some Hemiptera for identification which he collected at Letaba in the Northern Transvaal and which were observed by him to be predaceous upon the red scale of citrus. In this small collection is a remarkable species which deserves special attention. This species belongs to the Hemipterous family Isometopidae, a family of which no representatives have thus far been described or recorded from Africa. The few known genera and species of this family have all been described from Europe, North America, India and the Oriental Region, and as far as I am aware the feeding habits of none of these have been recorded in literature. The species collected by Mr. Bedford is thus not only of great interest as constituting the first record of Isometopids from the African continent, but is, like the other two Hemiptera submitted, of some economic importance in that it also plays a small biological role in the natural control of the red scale. As the cultivation of citrus in Southern Africa is historically of comparatively recent date it stands to reason that indigenous predators on the attendant and introduced Coccid-pests of citrus have only acquired this habit within historical times and that prior to the introduction of citrus and its pests they had some other natural and indigenous prey of which we are at present ignorant. As Mr. Bedford was primarily interested in the control of the red scale and other Coccid-pests of citrus and was not engaged in an investigation of the habits and biology of indigenous predatory insects which have coincidentally acquired a taste for the objects within his sphere of attention, the feeding habits, detailed life histories, and natural prey of this Isometopid, and of the other two species of Hemiptera described below, have not received special attention at present. We can thus only emphasise the fact that these insects are predatory in habits and that, having developed a predilection for red scale, they deserve the attention of the economic entomologist as possible biological aids in the control of this citrus pest, but that owing to numerical inferiority or comparative scarcity

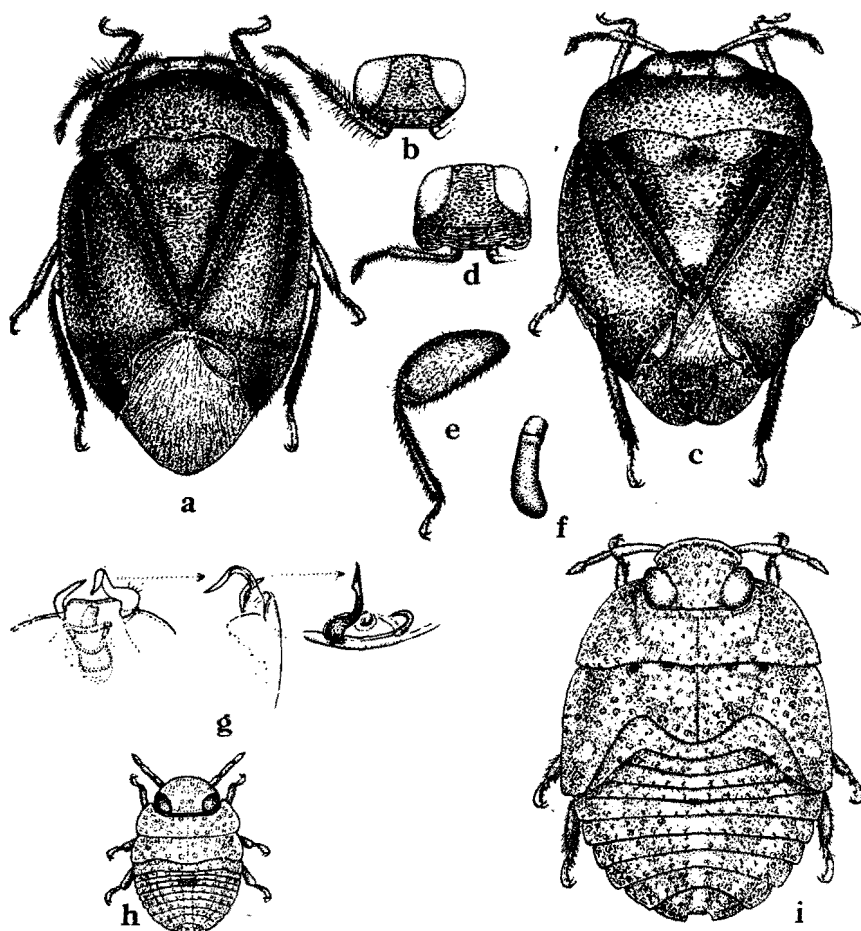


Fig. 1.

Letaba bedfordi n.gen. & n.sp.

a.—male; b.—front view of head of ♂; c.—female; d.—front view of head of ♀; e.—right hind leg of ♀ from outer aspect; f.—egg; g.—ventral, lateral and apical views of claspers of ♂ genitalia (last sternite removed); h.—very young nymphal stage; i.—older nymphal stage.

and diminutive size they play a relatively insignificant role in a citrus orchard.

The *Isometopidae* as a family was first described by Fieber in 1860, but it was relegated by subsequent authors to the rank of a subfamily of the *Miridae* or as an appendix to the *Miroidea* or

Anthocorid and Capsid-groups. It was, however, again elevated to a separate family by authors such as Heidemann, Gibson, Bergroth, and China who either described new forms belonging to it or who defined its characters. The same family was also described as the *Cephalocoridae* by Stein in 1860 who at the time was, however, not aware of Fieber's prior claim. According to Gibson and more recently to China the chief characters of the *Isometopidae*, which distinguish it from the *Miridae* and other Miroidea or Cimicoidea, are as follows:—

Head short, vertical, deflexed beneath; antennae four-jointed, the second joint the longest, longer than rest together and usually thicker than the others; rostrum four-jointed, the first segment long and visible; eyes relatively large; ocelli present, near base of head, conspicuous and raised above level of vertex. *Thorax* across broadest part very much broader than head, convex, the sides usually rounded; pronotum usually broader than long; mesonotum usually visible on each side at base of scutellum as a lobate process or elevation; scutellum prominent, narrowed posteriorly, convex discally, higher than hemelytra. *Hemelytra* with sides of embolium usually slightly rounded or amplified to a variable extent; cuneus

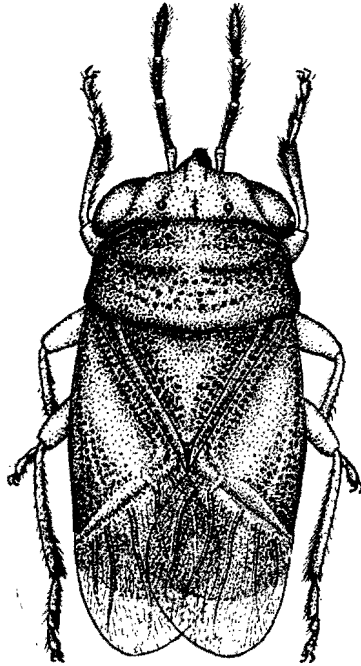


Fig. 2.

Geocoris lisolestes n.sp. (♀).

well developed; membrane without any longitudinal veins, but with a semicircular basal cell which may be undivided or usually divided into two by a short longitudinal vein which is usually continued on to membrane as a short longitudinal vein. *Legs* with the femora unarmed, the hind ones often swollen or incrassate; tarsi two-jointed.

The new South African genus is characterised as follows:—

Gen. **LETABA** n.gen.

Body broadly ovate in ♂♂, more oval or Pentatomid-like in ♀♀, maximum breadth in ♂♂ across base of hemelytra, in ♀♀ across middle of hemelytra; integument punctured above, visibly hairy or shortly pilose in ♂♂, smooth in ♀♀. *Head* broad, very perpendicular, flattened, larger in ♀♀, more trapezoidal, being broader across clypeus than across vertex; vertex very narrow, linear; ocelli far apart, touching eye-margins; eyes large, occupying greater postero-lateral part of head, slightly larger and more convex in ♂♂; frons flattened, very shallowly depressed medially, rapidly broadening along eye-margins from about middle to apical part, more so in ♀♀; clypeus short, considerably broader than long, very much broader in ♀♀ than in ♂♂, broadest part of head in ♀♀ across clypeus, its anterior margin in ♂♂ slightly rounded, in ♀♀ distinctly bisinuate, extending lobe-like on each side (cf. fig. I, b and d); antennae in ♂♂ with joint 1 the shortest, joint 2 the longest, much longer than the others combined, thicker than the others, also more setose, joint 3 slender, more slender and also longer than joint 4 which is elongato-oval, the hairs on 3 and 4 much finer; antennae in ♀♀ similar, but joint 2, though thicker than the others, distinctly more slender than in ♂♂, with only shortish hairs like those on 3 and 4; rostrum four-jointed. *Thorax* convex above, slightly higher than scutellum in ♂♂, but as high as scutellum in ♀♀; pronotum transverse, much narrower anteriorly than posteriorly, sides margined, convexly rounded, slightly more so and more amplified in ♀♀, the posterior margin bisinuate, the anterior margin in ♂♂ shallowly emarginate and antero-lateral angles obtusely rounded, the anterior margin in ♀♀ distinctly more deeply emarginate to receive the head, the antero-lateral part on each side of head projecting much more than in ♂♂; mesonotum much exposed laterally, slightly less along midline in ♀♀ than in ♂♂; scutellum long, triangular, narrowed apically, slightly more sharply pointed in ♂♂, convex discally, more so in ♂♂. *Hemelytra* slightly rounded on sides, distinctly more amplified in ♀♀; embolium distinctly demarcated from corium, very much broader in ♀♀ than in ♂♂ and at its broadest part quite or almost as broad as corium, and also more punctured than in ♂♂; cuneus broad, relatively much shorter and broader in relation to length and less pointed in ♀♀;

membrane extending much beyond apex of abdomen in ♂♂, relatively shorter and smaller in ♀♀, not extending much beyond abdomen, sometimes very much shorter than abdomen and reduced in size, without any longitudinal veins except a short indistinct one on outer side, but with a semicircular basal cell which is divided into a large and a very small indistinct cell (sometimes not visible) in outer corner, the entire basal cell in ♀♀ being sometimes slightly narrower than in ♂♂. *Venter* in ♀♀ markedly broad, depressed on each side, only convex posteriorly, its sides markedly amplified or convexly rounded, the connexival part broad, well developed and exposed dorsally to a variable extent, more so in ♀♀ with abbreviated membranes. *Legs* in ♂♂ slightly longer and more slender than in ♀♀; femora compressed in both sexes, the hind ones saltatory, very much broader or swollen than the others and in ♀♀ even much more swollen than in ♂♂ (fig. 1, e), their upper edge carinate in both sexes; hind tibiae with fine spicules and the others with fine hairs; tarsi two-jointed. *Genitalia* with the claspers in ♂♂ asymmetrical, the left one being longer and twisted (fig. 1, g); ovipositor in ♀♀ extending from base or very near base to apex.

As is evident from the above description and the description of the species below and also from figure 1 (a and c), this new genus is remarkable for its sexual dimorphism. So different are the two sexes in shape and structure that an entomologist, not knowing all particulars and confronted with only a few specimens of each sex, would not hesitate in assigning them to separate genera. So far as I am aware such sexual dimorphism has not been described¹ or noted in the case of the American, European and Oriental genera of this family, unless the sexes of some of the species described from those geographical regions have unwittingly been assigned to different species or genera. This problem needs closer and more careful investigation.

According to the generic descriptions of *Isometopus* as given by Fieber, Stein, Distant and Gibson, and the fine illustrations of the genotype species and another European species of that genus given by Puton, this new South African genus differs from *Isometopus* s.str. in having the head distinctly more flattened, the vertex very much narrower, the ocelli relatively farther apart and touching eye-margins, antennal joints 3 and 4 much more slender and their combined length, in comparison with the thickened joint 2, much shorter, the mesonotum more visibly exposed, its sides being distinctly more conspicuous and prominent, and in having the hind femora much broadened and carinate along upper edge.

The genotype and only known species is *Letaba bedfordi* which is characterised as follows:—

***Letaba bedfordi* n.sp.** (Fig. 1, a and c).

Body in ♂♂ shiny, predominantly very dark blackish brown to black, the head in front, thorax above and scutellum appearing more black; ♀♀ predominantly black or very dark pitchy blackish brown, shiny; hemelytra in ♂♂ dark brownish, the cuneus and marginal part of embolium slightly paler brownish; a little less than apical half of scutellum in ♀♀ (excluding dark apex) strikingly pinkish red or carmine red and apical part of scutellum in ♂♂ usually dark, but in some ♂♂ sometimes very obscurely piceous reddish; sternal parts and discal part of venter in ♂♂ tending to be sienna brownish to a variable extent, but sometimes dark blackish brown; in ♀♀ the medial parts of sternum and sometimes middle of venter if not entirely dark more yellowish brownish; abdomen above salmon pinkish or pale yellowish brownish discally in basal part and dark or black in sometimes more than posterior half, the broad connexival parts dark; narrow hind margin of vertex and hind margins of eyes pallid; eyes brown, reddish brown to blackish brown, sometimes greyish whitish in some ♀♀; antennal joint 2 straw-coloured yellowish or pale yellowish, the extreme base and apical part darkened or dark brownish like joints 3 and 4; rostrum yellowish, the base or basal half of joint 3 and more than apical half of last joint blackish, the first joint also sometimes dark; legs with the femora very dark blackish brown in ♂♂ to black in ♀♀, the apices of hind ones yellowish reddish, reddish brownish to red, the front and middle tibiae straw-coloured yellowish or pale yellowish brownish, the bases sometimes darkened, especially in ♀♀, the hind ones dark in both sexes, the tarsi yellowish, but their apices darkened; membrane smoky brownish and iridescent in certain lights in ♂♂, yellow or yellowish in less than inner basal half and dark smoky brownish or fuscous in slightly more than outer apical half in ♀♀. *Vestiture* on thorax, scutellum and on hemelytra in ♂♂ in form of fairly conspicuous, fine, shortish, fairly dense, pale sericeous yellowish gleaming hairs in the punctures, those on lower exposed parts of hemelytra finer; hairs on venter in ♂♂ very fine, not very dense, but those on last sternite on hinder part longer, more conspicuously gleaming sericeous yellowish to whitish; vestiture on body of ♀♀ scarcely evident, in form of minute microscopical hairs in punctures (the body above, however, appearing smooth and hairless), fine hairs on body below sericeous whitish, more visible on embolium below and on venter than on body above, but less evident than in ♂♂, those posteriorly on last sternite slightly longer, but not as long as in ♂♂; hairs on antennae pale sericeous yellowish, those on second joints in ♂♂ long and conspicuous, very short in ♀♀; pubescence on femora and hairs and spicules on tibiae gleaming sericeous yellowish to yellowish, but spicules on outer aspect of hind tibiae in ♀♀ dark, the pubescence on legs in ♂♂ also slightly longer and denser than in ♀♀. *Head* much broader across eyes in ♂♂ (fig. I, b), and across clypeus in ♀♀ (fig. I, d), than long, trapezoidal in ♀♀ and broadest across

clypeus whereas in ♂♂ it is broadest across lower parts of eyes; interocular space on vertex subequal to width of eye at same level in ♂♂, a little broader than eye in ♀♀; frons closely rugosely punctured in ♂♂, slightly more transversely in ♀♀ and also tending to be less punctured towards vertex, especially in ♀♀, its anterior margin (suture) in ♀♀ also less straight, more rounded; clypeus in ♂♂ quite five times as broad as long, in ♀♀ considerably broader, rugosely and more or less transversely punctured, more so and even transversely rugose in ♀♀; antennae with joint 2 longer than pronotum in ♂♂, a little shorter or subequal to length of pronotum in ♀♀, either about or a little less than twice combined lengths of 3 and 4 in ♂♂ and nearly half as long again as combined lengths of 3 and 4 in ♀♀, thicker than the last two joints in both sexes, but thicker in ♂♂ than in ♀♀, its apical part slightly thickened, more so in ♀♀, joint 3 nearly twice length of 4 in ♀♀, only a little longer than 4 in ♂♂; rostrum reaching base of venter between hind coxae, the first and third joints subequal in length and shorter than second and last, the latter usually a little longer than second in ♂♂, but sometimes subequal to second in some ♀♀. *Thorax* with the pronotum in ♂♂ about or quite three times as broad across hind part as long in the middle, a little more than three to about or nearly $3\frac{1}{2}$ times as broad as long in ♀♀, convex, more so in ♀♀, without any distinct or deep impressions, but slightly plane or sometimes very shallowly depressed laterally, closely punctured in ♂♂, the punctures fine anteriorly, becoming coarser posteriorly where they are more transverse and rugulose discally and apparently denser postero-laterally, distinctly less dense, but more coarsely punctured in ♀♀, especially on sides; mesonotal part depressed medially at base of scutellum and also emarginate there, the lobes punctured like pronotum; scutellum in ♂♂ scarcely or only little broader across base than long, about or a little more than twice as long from mesonotal part to apex as pronotum along middle, about as long as broad basally in ♀♀ the sides straighter in ♂♂ shallowly emarginate in ♀♀, closely punctured and more or less transversely and rugosely on disc in ♂♂, slightly less dense in ♀♀ and punctures on red spot sparser, more scattered, and ceasing at apex. *Sternum* with the pleural part of prosternum densely punctured in ♂♂, slightly more coarsely so in ♀♀; mesosternum smooth, convex medially, arcuate posteriorly, only the sides antero-laterally finely punctured, rather densely and much more extensively so in ♀♀; metasternum narrowed and pointed posteriorly, its apical part carinate continued as a basal carina of venter, pleural parts of metasternum dull, the antero-lateral part shiny and finely or rugulose punctured; odoriferous aperture slit-like. *Hemelytra* much overlapping abdomen in ♂♂, but exposing sides of abdomen to a variable extent beyond embolium in ♀♀; clavus fairly densely punctured in ♂♂, only slightly coarser than on sides of scutellum, relatively sparser

and more coarsely punctured in ♀♀; corium with sparser, more scattered punctures, more so in ♀♀, more extensively punctured in ♂♂, becoming indistinct only posteriorly whereas in ♀♀ greater discal and posterior part appearing smoother and indistinctly punctured; embolium in ♂♂ only punctured along sutural line between it and corium, the rest of its surface impunctate and coriaceous; embolium in ♀♀ broader, relatively more distinctly and coarsely punctured, the punctures becoming more shallow and separated towards apex; cuneus in ♂♂ a little longer than broad across base, mostly impunctate, broader than long and relatively coarsely punctured in ♀♀; membrane finely wrinkled, shorter than abdomen in some ♀♀, sometimes even very much shorter and exposing a considerable part of abdomen posteriorly. *Wings* faintly milky whitish, opalescent and iridescent. *Abdomen* coarsely punctured laterally above on connexival part, less so on sides of last tergite, especially in ♀♀; discal part distinctly less punctured; venter in ♂♂ shining, but finely coriaceous, microscopically sculptured or punctured along connexival part, more distinctly on sides and apical part of last sternite, the discal and middle part in ♀♀ impunctate and coriaceous, but the sides, connexival part and along anterior borders of sides of sternites more distinctly and finely rugulose punctured, the more prominent and convex last sternite shining and impunctate. *Legs* smooth, shining; first tarsal joint shorter than second. *Claspers* of ♂ as shown in figure I, g.

Length of body (incl. membrane): about 2.8—3.04 mm. (♂♂) and 2.5 — 2.6 mm. (♀♀). Maximum breadth across hemelytra: about 1.6 — 1.8 mm. (♂♂) and 1.8 — 2 mm. (♀♀).

Described from 6 ♂♂ and 13 ♀♀ of which the types are in the South African Museum.

Locality: — North Transvaal: Letaba [E. C. Bedford, 15/9/1944 (Types); 3/10/1945; 16/10/1945; 23/10/1945; 26/10/1945].

According to Mr. Bedford these insects are very active and can run fast when disturbed. They do not fly readily, but prefer to jump like fleas. Some of the specimens submitted by him were collected at random, but others were reared from nymphs brought in from the same trees where adults had been collected. The insects were always found on trees heavily infested with red scale. They were, however, relatively scarce. On one quarter plot of trees which was, however, left unfumigated the insects bred up rapidly during the winter and early summer and cleaned up the scale, even controlling it on heavily infested trees.

DESCRIPTION OF SOME STAGES IN THE LIFE HISTORY

Egg. In one ♀ the abdomen has been detached and mounted separately; some shrunken and collapsed eggs being visible in it. Judging from one of these eggs, which is more visible than the others, the egg (fig. I, f) of this insect is yellowish translucent,

elongated, slightly curved, slightly narrower apically than posteriorly, truncate apically, rounded posteriorly, and provided apically with a conspicuous plug, cap or lid as shown in figure. The length is about .68 mm., width across apex about .16 mm., and the maximum breadth posteriorly about .2 mm. It thus appears that the egg is relatively large in relation to the size of the insect, but as this egg is described from dried out material inside the abdomen it is quite probable that an egg deposited outside may appear slightly different and with a harder or more darkly chitinated shell.

Nymphs. Seven nymphs, mounted on cards and representing various stages, were also submitted and found feeding on red scale. From these mounted specimens it is very difficult to state to which nymphal stages they belong without correlating these stages with observations based on a series of moults undergone by living specimens from the egg stage to the adult. It appears, however, that at least five stages, differing mostly in size and small details, are represented. Of these the youngest and oldest specimens are figured (cf. fig. I, h and i). The nymphs are characterised as follows:—

Body with the upper surface dull coriaceous or finely shagreened, brownish grey or ashy grey, more reddish brownish in youngest stage; disc of abdomen above more or less diffusely tinted dull reddish brownish or rufous, especially in very young stages; the connexival part and two indistinct submedial longitudinal bands more brownish in oldest stage; a pale longitudinal central line on thorax, continued as a broader, indistinct band on abdomen above, more distinct in older nymphs; entire head and body above with numerous, small, separated, greyish whitish or whitish spots, in the minute, point-like, dark centre of each of which is a minute upright whitish seta; in addition to these small pale spots there are in older nymphs a larger diffuse palish spot on head in front of each eye, one centrally and anteriorly and a larger one on each side of pronotum, a submedial pale spot on each side at base of mesonotal (scutellar) part, one on each hemelytral lobe nearer apex, and one on each side submedially at base of abdomen; in older nymphs there is also a submedial blackish spot on each side at base of scutellum, and a medial one at base of third segment; sternal and ventral parts in younger nymphs pinkish or yellowish, in older ones the pallid part is bordered by whitish, which in turn is again bordered by the broad ashy grey sides of body (or connexival part); legs pallid, becoming greyish brownish in older nymphs. *Head.* with the clypeal part undifferentiated, rounded anteriorly; antennae at first pallid, later greyish brownish, joint 2 at first scarcely or only a little longer than 3, the latter a little longer than 4; eyes well developed, but ocelli not evident. *Thorax* with second segment of juvenile developing into the hemelytral lobes and scutellum of older nymphs, and the third thoracic segment becomes encroached upon by the developing scutellar part, and eventually

nearly covered by the latter, the sides extending backwards as lobes of wings partly under hemelytral lobes. *Abdomen* with 9 visible segments. *Legs* with the hind femora beginning to thicken at an early stage.

Length of youngest nymph: about 1.08 mm.; of oldest: about 2.48 mm. Maximum breadth of youngest nymph: about .76 mm.; of oldest: about 1.88 mm.

Locality:— North Transvaal: Letaba (E. C. Bedford, 15/9/44 and 15/5/46).

OTHER PREDATORS OF RED SCALE.

In addition to the predatory Isometopid two other new species of Hemiptera were also found attacking red scale by Mr. Bedford. These belong to the families *Lygaeidae* (or *Geocoridae*) and *Antho-
coridae* respectively and may be recognised as follows:—

***Geocoris liolestes* n.sp. (Fam. *Lygaeidae*) (Fig. 2).**

Body predominantly black, brilliantly shining, the black parts with a slight bluish black sheen in certain lights, especially below; head carmine red, orange yellowish to yellow, that of ♂ more yellowish, the sides of neck region and sometimes the vertex at base narrowly black; eyes reddish brown or dark reddish brown; antennae yellowish brown to dark blackish brown, joint 1, however, yellowish, only its apex below dark, base of 2 also yellowish, narrow apices of joints 2 and 3 and of 1 above ivory whitish or yellowish; rostrum yellowish, its apex and middorsal line (stylets) brown or blackish brown; sides and outer aspect of postero-lateral angles of pronotum in ♂ yellowish; extreme apex of scutellum pallid or yellowish, more so in ♂, sometimes entirely black in some ♀♀; membrane with more or less basal two-thirds in ♀, and a little less in ♂ very dark blackish brown, the apical part translucent hyaline, with a slight milky whitish tint, more evident in ♀; anterior margin of prosternum, acetabular parts of sternum, tubular slit of odoriferous gland, coxae and legs pallid, the latter almost translucent straw-coloured whitish or yellowish, the claws and pulvilli, however, dark; narrowish hind margins of pleural segments and sides of meso- and metanota under hemelytra as well as last tergite and more obscurely the venter below posteriorly also more or less yellowish in ♂. *Head* across eyes broader than across pronotum in front, but slightly narrower than across base of pronotum in ♀ and about equal in ♂, more than twice as broad across eyes posteriorly than long, only slightly produced anteriorly and medially, not snoutlike, the tylus scarcely extending beyond jugae; upper surface of head smooth, impunctate, without any pubescence, slightly more convex medially than laterally, with a central de-

pressed line, the head below with a fine, central, carinate line; eyes quite as long as head along midline; antennae with joint 1 projecting slightly beyond level of apex of head, quite half as long as 2, the latter a little longer than 3, the last joint the longest, thicker than the others, elongate-spindle-shaped, and fine pubescence on it also denser than on rest of joints; rostrum extending to between hind coxae, joint 1 the thickest, quite $1\frac{1}{2}$ times as long as 2, also longer than 3, the latter a little longer than 2, joint 4 the longest, a little less than twice length of 2. *Pronotum* much longer than head, much broader across base than long, broader basally than apically, thus narrowed to eyes; sides substraight to eyes, then rapidly narrowed anteriorly; anterior margin straight; hind one broadly rounded or arcuate; disc with a transverse depression just before middle, more distinct in ♀, this depression slightly concave anteriorly, also not reaching extreme sides, and interrupted medially; upper surface with deep, scattered and separated, rather sparse punctures, more regular and denser in depression on each side, the base, anterior margin and transversely in front of depression, as well as extreme sides, impunctate, without any pubescence; propleural part slightly depressed, slightly more densely punctured than above, also without pubescence. *Scutellum* subequal in length or a little shorter than pronotum, sharply pointed apically, a little broader than long, its sides straight, transversely convex near base, the extreme base itself depressed, mid-dorsal line also more convex than sides; upper surface with a row of punctures across base and along sides and some sparse, separated, deep punctures laterally towards apex, the convex parts impunctate, but more or less feebly transversely ridged from transverse convexity to apex along midline. *Sternum* coarsely punctured on pleural parts, denser than above, the medial meso- and metasternal parts however impunctate, slightly duller, more coriaceous; area surrounding slit of odoriferous gland dull, greyish and very finely scabrous; prosternum comparatively very short, transversely deeply grooved in front of front coxae. *Hemelytra* with the clavus smooth, shining, having only a row of separated punctures along its extreme side; corium smooth, shining, with two rows of punctures on claval side and some scattered ones postero-laterally, the broadish slope apically leading to depression between corium and membrane also smooth and impunctate; embolial part well defined, line of separation marked from corium by a row of punctures, also with some scattered punctures posteriorly except along extreme sides; membrane extending some distance beyond abdomen, with the five veins fairly distinct, its hinder part very much rugosely and areolately wrinkled; wings vitreous, highly iridescent, rugulosely wrinkled. *Abdomen* finely and densely punctured above discally, becoming more rugulose posteriorly, especially in ♀, the last tergite, however, impunctate, transversely substriate; connexival part and extreme sides above impunctate; venter impunctate, the sides of sternites

and connexival part below wrinkled or subrugulose longitudinally; last tergite with fine hairs above, denser in ♂, and venter also with fine pubescence, denser and more evident in ♂. *Legs* with hairs on femora fine, sparse and short, the yellowish or yellowish golden ones on tibiae below towards apex and on tarsi as well developed as in other South African species; joint 1 of tarsi subequal in length to 2 and 3 together.

Length of body (incl. membrane): about 4.8 — 5.6 mm. (♂ slightly smaller than ♀). Breadth across eyes: about 1.9 — 2 mm. Breadth across base of pronotum: about 1.9 — 2.2 mm. Breadth across widest part of hemelytra: about 1.9 — 2.48 mm.

Described from 1 ♂ and 2 ♀♀ of which the types are in the South African Museum.

Locality:— North Transvaal: Letaba [E. C. Bedford, 5/4/1946, "on orange tree with ladybird beetle on beak" (Holotype); 20/12/1944, "collected on orange tree. Fed on red scale in cage"; and 25/5/1946).

Chiefly characterised by the smooth, shining, polished, and predominantly black body, orange yellowish or red head, pallid legs, and lack of pubescence on body above. From other known and described South African species it may be distinguished by the entirely or predominantly black pronotum which even in ♂ is only yellowish on sides, lacking the whitish infusions across hind borders or along midline which are present in ♂♂ of other known species; the entirely black hemelytra; pallid legs and absence of pubescence on body. The only South African species with which it may be confused is *ruficeps* (Germ.), but this latter species, according to the descriptions of Fieber and Montandon, has the anterior border and sides of pronotum whitish and the margins of the hemelytra also whitish.

***Triphleps cocciphagus* n.sp. (Fam. Anthocoridae).**

Body mostly brownish, yellowish brownish or sienna brownish to castaneous, greasy above, more shining below; head in front of eyes, the callus-like part in front of transverse depression on pronotum, the scutellum, hemelytra (excepting cuneus) and body below paler, more yellowish or pale yellowish brownish; anterior margin and hinder half of pronotum, cuneus, connexival part below and sometimes to a variable extent the venter usually darker brown to blackish brown; clavus, corium and base of embolium sometimes appearing paler, more translucent yellowish; bases of sternites sometimes yellowish in specimens with a brownish venter; ocelli reddish; eyes dark brownish to blackish brown; antennae, rostrum and legs yellowish, the third antennal joint and sometimes apical part of joint 2 darkened; membrane slightly tinged greyish yellowish to faintly smoky yellowish, iridescent. *Head* subequal in length

to width across eyes or slightly broader across eyes; upper surface finely scabrous to level of eyes anteriorly, but neck smooth, covered with fine yellowish hairs of which a few on each side are longer than the others; interocular space about twice width of an eye; eyes a little deeper than long, granularly faceted, microscopically hairy; antennae slightly longer than head and pronotum together along midline, covered with moderately long pale hairs, slightly longer on last two joints, joint 2 in ♂ slightly thickened apically, about twice as long as 3, joint 4 very slightly longer than 3, compressed and pointed apically, joints 3 and 4 together slightly longer than 2; rostrum with fine, pale hairs, the last joint longer than joint 1, subequal in length to fourth antennal joint, the longest second joint subequal in length to second antennal joint. *Pronotum* with the anterior margin straight, there about as broad as long along middle, the posterior margin broadly emarginate, much more than twice as broad as anteriorly; sides almost straight, only feebly marginate; discal part transversely depressed just behind middle, the depression feeble laterally, the part anterior to depression transversely convex, callus-like; upper surface finely scabrous, the anterior part in front of callus obscurely transversely wrinkled, the entire surface with short, rather dense, sericeous yellowish hairs. *Scutellum* broader than long, with fine, rather dense hairs, coriaceous, but apical part beyond transverse depression transversely, but obscurely, rugulose. *Hemelytra* with rather dense, pale hairs of which two next to outer part of apical angles of cuneus are longer, shortly bristle-like; surface feebly coriaceous except apical part of embolium and the cuneus which are duller, rougher, more subscabrous; membrane extending much beyond apex of abdomen; its surface appearing finely coriaceous and its three veins distinct. *Sternum* with the pleural parts microscopically rugulose or subscabrous; mesosternum smoother, more shining, with fine yellowish hairs. *Abdomen* with rather dense, silvery or sericeous yellowish, gleaming hairs which are longer and more conspicuous posteriorly, especially along sides apically; connexival part below more coarsely scabrous or punctato-rugulose sculptured; venter with a slightly more aeneous sheen, the sides of sternites from segment 2 microscopically rugulose or scabrous across apical half of segment 2 and broadly across middle parts of the others, this sculpture finer than on connexival part and becoming obsolete discally below; apical part of abdomen in ♂ not asymmetrically twisted or curved sideways. *Legs* with rather dense, pale hairs, apparently slightly denser on tibiae; front tibiae in ♂ with only dense, fine, shortish hairs below, without a distinct row of spinelets.

Length of body (incl. membrane): about 1.8 — 2 mm. Breadth across base of pronotum: about .72 — .76 mm.

Described from 4 ♂♂ of which the type is in the South African Museum.

Locality:— North Transvaal: Letaba [E. C. Bedford, 11/5/1944 "adult predatory on red scale" (Type); and 3/5/1944].

An easily recognised species by its predominantly sienna brownish, castaneous brownish and yellowish brownish coloration, fine and feeble integumental sculpture, relatively dense, though fine, pubescence, faintly tinged membrane, and predominantly yellowish legs and antennae. It can only be confused with *brunne-scens* Popp. and possibly *cardiostethoides* Popp. both of which also have much brown in their coloration. From the former it, however, differs in having the second antennal joint distinctly longer than the interocular space, the base of pronotum distinctly more than twice width of anterior margin, a much finer sculpture on basal half of pronotum, paler legs, etc. From the East African *cardiostethoides* it appears to differ in having a distinctly longer second antennal joint, narrower interocular space, relatively broader pronotal base in relation to anterior margin, a less dark membrane which has 3 and not 2 veins, and entirely yellowish legs. From ♂♂ of the more brownish-coloured form of *thripiborus* described by me in 1940 these ♂♂ differ in having a distinctly longer second antennal joint, more granular eyes, very indistinctly or scarcely margined sides of pronotum, slightly more tinged membrane, untwisted abdomen, absence of a distinct comb of fine spinelets on front tibiae below, and presence of more pubescence on body.

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